



Stormwater

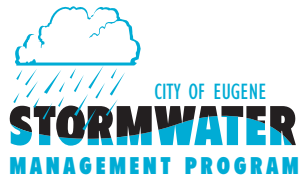
CONNECTIONS

Spring 2006

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There's no problem with washing your car. It's just how and where you do it. All of us benefit from clean rivers. What can you do to help?



Stormwater Connections is published by the City of Eugene Public Works Department to enhance awareness of stormwater and related surface water management issues.

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Cleaning your car the river-smart way

Pick any sunny day in many neighborhoods and you're likely to spot soapsuds spilling from driveways onto the street. From there, they creep along the gutter and often disappear into a stormwater drain. It may be miles later before this soapy concoction arrives at the end of the drainage line – the river. Some people think a little soap and bubbles won't matter. Even if only half the cars in town got washed, you could imagine that a little bit of soap adds up to a lot! While detergents may generally be considered a safe product, they pose a greater threat to all types of aquatic life, especially if they are present in sufficient quantities. Oils, grease, heavy metals from brake linings, rust, phenols, dyes, acids and ammonia are some of the pollutants that may get washed off when cleaning your car.

The detergent dilemma

- Detergents ruin the protective external mucus layers of fish, leaving them susceptible to bacteria and parasites.
- Concentrations as low as 5 parts per million will kill fish eggs and 15 parts per million will kill most fish.



Photo: Wash, St. Dept. of Ecology, King Co., Bellevue, Seattle, Tacoma & Puget Sound Action Team

Soapy water from washing cars doesn't stop at the end of the driveway. Where does yours end up?

- They can cause extreme damage to the gills of a fish making respiration difficult.
- They lower water surface tension which makes it easier for organic chemicals (such as pesticides and phenols) to be absorbed by fish.
- Many contain phosphates which promote plant growth and can cause excess algae to grow. As plants decay, large amounts of oxygen are consumed -oxygen that fish need to survive. Algae not only looks and smells bad, it also harms water quality.

- Biodegradable, low-phosphate soap may be a better choice but it doesn't mean toxic-free.

Be smart about washing your car

- When you clean your car, be thoughtful about how and where you do it.
- Use only soaps, cleaners and detergents labeled phosphate free or biodegradable. The safest products are vegetable or citrus based soaps. Remember to use them sparingly.

- Dump any remaining dirty wash water in the sink or toilet or dispose of it on your lawn or in a flower bed.
- Sweep driveways and street gutters before washing to prevent dirt, leaves and trash from going into the gutter and stormdrains.
- Wash your car in an area where runoff doesn't flow into the street or divert it back into a yard.
- Or wash your car at a self-service or commercial car wash. All wash water is treated before it empties into the river.

More Stormwater Connections

Look-out! It's headed for the stormdrain.

Have you heard the saying "An ounce of prevention is worth a pound of cure?" Someone who knows all too well about the extra effort required from clean-up work is Troy Kreger with the City's "Illicit Discharge" program. What exactly does that mean? An Illicit Discharge is the dumping, spilling or washing of unnatural substances into the city stormwater system that makes its way to local open waterways. While some spills may be the result of products falling off of trucks onto the street or vehicle fluids being released during accidents, more common problems with pollution may be lack of awareness or understanding. Frequently cited violations include: illegal dumping or the washing

of painting and concrete work or tools into the gutter, debris from pressure washing, cleaning agents, dry construction materials and discharges from pools, hot tubs and carpet cleaning water. Allowing any of these discharges into gutters and storm drains is a violation of federal, state and local law. In addition to contaminating our waterways, pollutants from these activities often flow down the gutter where children and pets can be unknowingly exposed to them. Not only are they unsightly, they can be tracked into driveways and down the street by vehicles passing through them.

Be informed!

- Using water to clean up spills, construction equipment and debris on your property only spreads a

pollutant over a greater area and makes it more difficult to clean up. Instead, use dry clean-up methods such as applying absorbents and sweeping up to dispose of in the trash.

- If you don't want a contaminant or debris on your property, dispose of it properly rather than in the gutter or along the street.
- If a pollutant comes from your property, you are legally responsible for any associated damage or clean-up costs -even if it's caused by someone you hired.
- If a spill or discharge occurs, act quickly to contain and clean up pollutants.

Remember to plan ahead as you tackle any household tasks. This will prevent pollutants from leaving your property.

A City stormwater maintenance crew cleans up a paint spill along a busy street.



This program is part of the City's Comprehensive Stormwater Management Plan and

stormwater permit. Local stormwater fees help support this program.



Young parade participants dressed up for the Procession of All Species Parade.

Enjoy the **EARTH DAY** Celebration at EWEB Plaza, April 22nd

This seventh annual Earth Day Celebration is an environmentally-based event that celebrates the Earth and its resources. This year's event features educational activity booths, the John H. Baldwin Film & Lecture Series, tours of Short Mountain, alternative vehicles, entertainment throughout the day, a Procession of All Species Parade and an Earth Day Art Sale.

Free LTD bus service is available on Earth Day, with shuttles from Saturday Market to EWEB's River Edge Plaza during event hours. The event is produced by the volunteer efforts of the Earth Day Steering Committee and See Development, Inc. The event theme is *Sustainability is Food for Thought*.



Java energizes compost & gardens!



With spring at our doorsteps, avid gardeners aren't the only ones benefiting from a cup of coffee before heading out to the garden. Hungry gardens and compost piles also welcome the pick-me-up that a healthy dose of coffee grounds can supply. Fresh juicy grass clippings will also turn up the burner under a ho-hum compost pile. How is one to know what compost ingredients and in what proportions are best for a compost pile? Fortunately, the Compost Specialists at the Lane County Extension Service have taken the guess work out of hot composting and have provided tried-and-true

recipes to use. Here's a recipe when made will fill a compost bin and turned once a week will provide ready-to-use compost in 6-8 weeks.

Coffee Grounds Recipe (Hot)

2 parts kitchen scraps or grass clippings

1 part coffee grounds

1 part leaves

Compost materials are easy to find. Leaves are available at many community gardens, and grass clippings are never in short supply in the spring.

Coffee grounds are available year round, smell wonderful, and activate soil and compost pile microorganisms. Coffee grounds are an excellent nitrogen source for the compost pile, supplying about 2% by volume. They can be used safely in the garden or compost pile just as one would use manure, without the pathogen concerns that manure can bring. Coffee grounds can

be used as a side dressing for established plantings. One inch of coffee grounds can be worked into the top 7 inches of soil as an amendment four weeks before planting. One inch of coffee grounds can be used as a mulch to prevent weed growth, but watch for caking that will deflect water penetration. Most of the acidity of coffee grounds ends up in the coffee. The grounds are

What is a pathogen?

A pathogen is any microorganism with a demonstrated capacity to cause disease. Common human pathogens found in manure include E. coli and salmonella.

much less acidic, and with composting, hardly acidic at all.

Currently 53 tons of coffee grounds are being diverted each year from local coffee shops to backyard compost piles and gardens. Log on to: <http://extension.oregonstate.edu/lane/horticulture/Compost.php> to find a list of local coffee shops participating in the "coffee grounds to compost" program, or call the

Extension Compost Hotline at 682-7320. Starbucks has a national program of bagging spent coffee grounds for their customers.



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Last summer, Landscape Architecture students volunteered to help in the nursery.

Native Plant Nursery Hosts Open House

The City's Native Plant Nursery has now expanded to two locations. Thanks to Stream Team volunteers who contribute hundreds of hours annually, native plants have a temporary "home" until they are replanted in restoration projects in local natural areas.

One never knows what you'll learn (or teach) or who you might enjoy a conversation with on any given day. Want to know about the native plant nursery and how you might get involved? Join us on Sunday, April 30th for an Open House at the newest nursery located in Alton Baker Park. Stay

on the main road into the park and follow the signs to our shade house. We'll have door prizes and refreshments. Contact Stream Team for more information or to say that you are coming: lorna.j.baldwin@ci.eugene.or.us or 682-4850. Hope to see you there!



Landscaping that allows surface water to flow deeper into soil helps support groundwater recharge. Water seeps through soil first, then flows laterally. Some continues to percolate deeper into the soil. This body of water will eventually reach a saturated zone and replenish or recharge groundwater supply.

Lanterns

Blending design & function to improve water quality in our own yards.

The way we design and tend our landscapes, build and maintain our homes, and dispose of or treat our trash and other solid wastes impacts water quality.

Why not shape the landscape around your home so that it combines attractive planters that help filter storm-water pollutants prior to leaving your property? If you are thoughtful about your plant selection, and choose the right plant in the right location, you can also reduce your water

consumption needs as well.

Two examples shown below are an infiltration planter, which requires well-draining soil, or an flow through planter, which will work even in clay soils.

Flow Through Planter

A flow through planter is a structural facility filled with topsoil and gravel and planted with vegetation. The planter is completely sealed and a perforated collection pipe is placed under the soil and gravel along

with an overflow pipe, and the storm water is directed to a gutter or an acceptable destination point. This type of planter receives runoff from impervious surfaces where it is filtered and retained for a period of time.

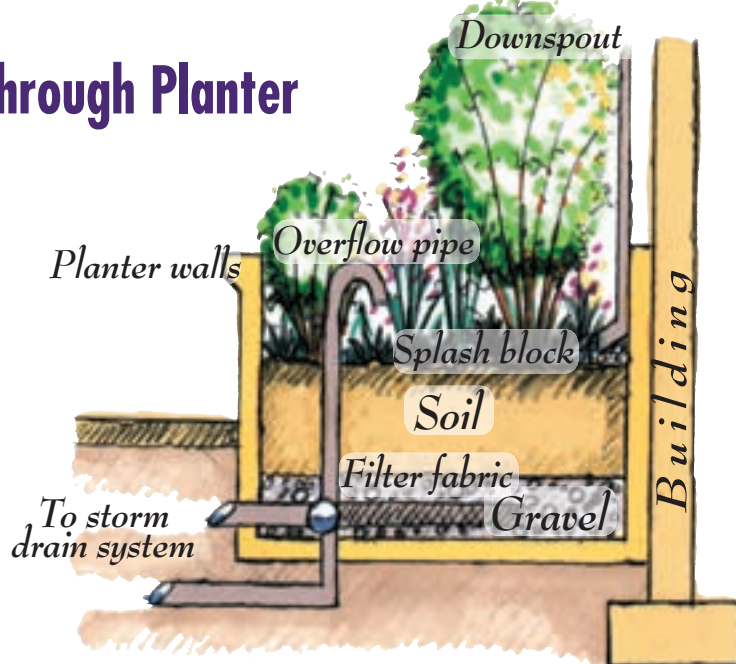
Infiltration Planter

An infiltration planter is a structural facility filled with topsoil and gravel and planted with vegetation. The planter has an open bottom, allowing water to infiltrate into the

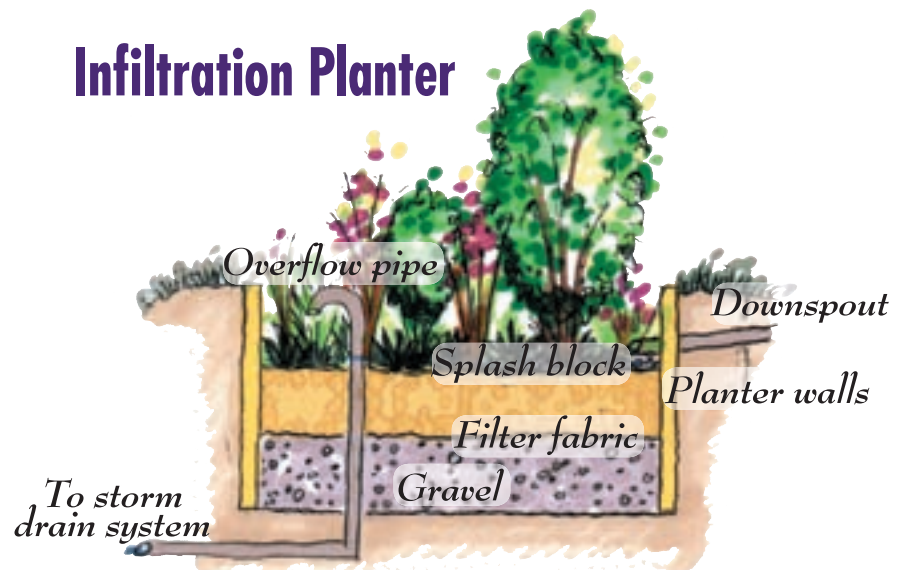
ground. Storm water runoff from impervious surfaces is directed into the planter box, where it is filtered and infiltrated in the surrounding soil.

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Flow Through Planter



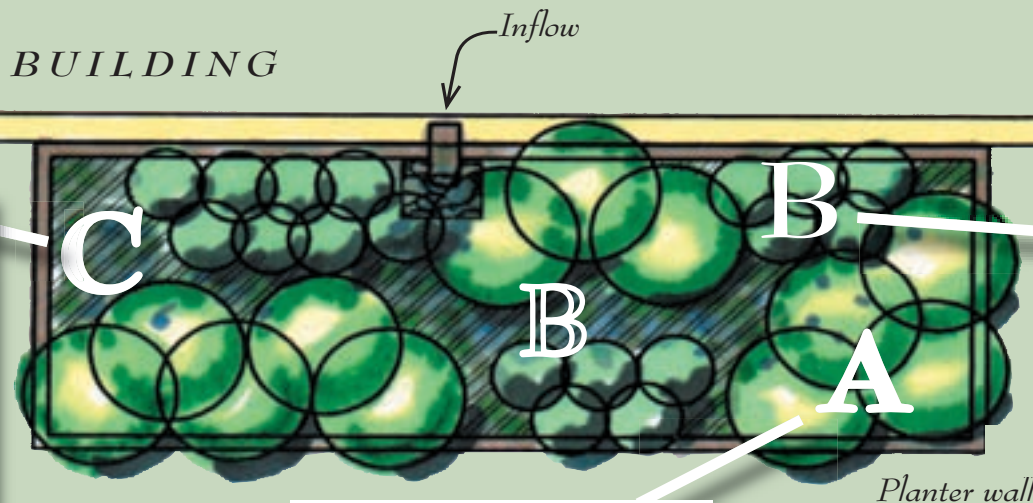
Infiltration Planter



Stormwater management is a key element in maintaining and enhancing the City's livability.

with a *Purpose*

Plant Material Examples for Infiltration and Flow Through Planters



LIST 'C' - FORBS/PERENNIALS/ GROUNDCOVERS

(4" pot size)

Beach Strawberry

Fragaria chiloensis

Broadleaf Lupine

Lupinus latifolius

Buttercup

Ranunculus spp.

Common Rush

Juncus effuses

Deer Fern

Blechnum spicant

Dense Sedge

Carex densa

Douglas Spirea

Spiraea douglasii

Oregon Sunshine

Eriophyllum lanatum

Riverbank Lupine

Lupinus rivularis

Slough Sedge

Carex obnupta

Spreading Rush

Juncus patens

Tufted Hairgrass

Deschampsia cespitosa



LIST 'A' - SMALL TREES

(3 gallon size)

Blue Elderberry

Sambucus cerulea

Cascara

Rhamnus pershiana

Douglas Black Hawthorn

Crataegus douglasii

Indian Plum

Oemlaria cerasiformis

Mock Orange

Philadelphus lewisii

Red Elderberry

Sambucus racemosa

Serviceberry

Amelanchier alnifolia



LIST 'B' - SHRUBS

(1 gallon size)

Baldhip Rose

Rosa gymnocarpa

Cinquefoil

Potentilla gracilis

Dull Oregon Grape

Mahonia nervosa

Oregon Grape

Mahonia aquifolium

Pacific Ninebark

Physocarpus capitatus

Redtwig Dogwood

Cornus sericea

Sword Fern

Polystichum munitum

Thimbleberry

Rubus parviflorus

Yellowtwig Dogwood

Cornus sericea 'Flaviramea'

For a free brochure, visit
www.eugene-or.gov/pw
(then click on the link to stormwater)

Flood Smart Now Could Spell R-E-L-I-E-F Later

What a wet winter! Despite several stretches of heavy rainfall, and flood warnings and watches in our area this last season, there

were no serious flooding problems. Yet, as we know, we get our share of unpredictable weather here. If flooding is possible where you live,

participates in the National Flood Insurance Program (NFIP), flood insurance is available to area residents and business owners.

Individuals can buy flood insurance regardless of whether their flood risk is considered high, medium or low.

Federal disaster assistance is available only in those areas officially declared as federal disaster areas. More than 90 percent of all disasters in the United States are not declared federal disasters. Much of the assistance available is in the form of loans, for which applicants must demonstrate the ability to repay. Flood insurance pays even if a disaster is not declared.

Flooding can also occur due to local storm drainage conditions, in areas not considered to be “high risk.” FEMA indicates that between 20 and 25% of flood losses occur in areas outside of mapped flood hazard areas

According to FEMA, statistics indicate that the average home has a 5% chance of being damaged by fire during the life of a 30-year mortgage. For that same time period, a house located within a Special Flood Hazard Area has a 26% chance of flooding.

To inquire about obtaining flood insurance, contact your insurance agent. For information about local Special Flood Hazard Areas, call 682-8400 or visit the City of Eugene’s website at www.eugene-or.gov. Check into

flood insurance now and have one less thing to worry about next winter!

Take action through prevention

Clutter-free channels, creeks & drainage easements are essential to reduce flooding. Activities such as discarding lawn clippings and yard debris, building forts in culverts, and extending yard fences across stream channels interferes with the stormwater system’s ability to handle large storms. It is important for property owners to understand that even creeks that may be dry for most of the year are integral to adequately dealing with stormwater in the area.

Help yourself and your neighborhood

If you have property with an open channel for stormwater, do not use it for yard debris. Over time, this will fill up the channel and block stormwater

coming from upstream. In flatter areas, it may be hard to tell if there is an open channel. The Public Works Departments of Eugene, Springfield and Lane County have stormwater maps that can help you.

Do not build a fence across an open channel. Even an “open” fence like a chain link fence can trap debris and eventually block the proper drainage of stormwater.

Report blocked culvert crossings. Your respective Department of Public Works maintains culvert crossings of all City or County roads and can work quickly to open blocked culverts. Please let us know if you spot a problem.

Stay informed on current stormwater issues affecting the metro area. Read publications such as this newsletter or check with your Public Works Department for more information. In Lane County, call 682-6968. Eugene residents can call 682-2739.



The water level in the Willamette River rose enough to partially submerge this bench in Alton Baker Park earlier this year.

In 1996, the Eugene-Springfield area had a rainstorm that dropped nearly 5.2 inches of rain within a 24 hour period. That storm event was considered to be a 50 – 75 year storm event – depending on where in the Willamette Valley you lived and how much rain fell in your area.

are you protected and what preventive measures are you using?

Areas along the Willamette River, Amazon Creek, other waterways and even in some areas not along waterways have been designated by the Federal Emergency Management Agency as being in the Special Flood Hazard Area (SFHA). The SFHA is defined as the land in the floodplain subject to a known 1% or greater chance of flooding within any given year. This is sometimes referred to as the 100-year flood.

Flood insurance facts

Flood damage is not covered by home owner’s insurance policies and most require a 30-day waiting period before coverage goes into effect. Because the City of Eugene



This bridge was flooded during the heavy rains in January.



For more information, visit our web site <http://www.eugene-or.gov/wetlands>. To volunteer in the wetlands, contact Lorna Baldwin with Eugene Stream Team at 682-4850.

Floodplains Flourish During Rains

When heavy rains continue for days and days, it's no surprise that flooding begins to become a potential threat in many communities. When impervious surfaces such as streets and parking lots prevent rain from being absorbed into the ground, excess water begins to collect in low lying areas or surfaces with little or no drainage. Wetlands, on the other hand, have just the right combination of soils and plants that can easily handle large quantities of water.

Flooding can occur when a river spills over the banks onto the floodplain. Floodplains are broad, relatively flat areas of land adjacent to river channels. These areas play an integral part in the health of both riverine (freshwater habitat associated with rivers and streams) and terrestrial ecosystems (dry-land habitats). They help maintain the health of the river by dissipating flood water energy, which prevents erosion, and acts as a biological filter by removing sediment and other water

pollutants. Floodplains are important in the lives of both terrestrial and aquatic animals for several reasons. They provide habitat for foraging as well as breeding and regeneration cycles, preserve plant and animal communities, help clean water traveling through our waterways and buffer land downstream from higher flood waters.

The reconnection of a portion of Amazon Creek with its floodplain has allowed the creek to provide its historic ecosystem services. Prior to settlement in the early 1850's, the landscape of the Lower Amazon Creek basin was a maze of braided channels that seasonally overflowed their banks into the neighboring wet prairie. In the late 1800's, the wet prairie was converted to agricultural uses. Then, in the 1950's, the creek was disconnected from its floodplain when it was channelized and lined with flood control levees.

The City of Eugene, in collaboration with the U.S. Army Corps of Engineers and the U.S. Bureau of Land Manage-

ment, tremendously enhanced the quality of the 400-acre area now known as Meadowlark Prairie in 1999. Through this floodplain restoration project, the levees adjacent to Amazon Creek were re-located to the perimeter of the project area and much of the surrounding floodplain was restored to wet prairie. With the levees on the perimeter of the project area, Amazon Creek can now reconnect with its floodplain during heavy rain events, while adjacent property remains protected from flooding. Meadowlark Prairie recently demonstrated its flood water storage capacity during the heavy rain on January 16th and 17th of this year. Water was spread up to five feet deep over more than 150 acres of restored wet prairie.

This \$4.2 million project was funded by a combination of sources including the U.S. Army Corps of Engineers Section 1135 program, the Land and Water Conservation Fund program, the West Eugene Wetland Mitigation Bank, and City of Eugene.

View of Meadowlark Prairie



January 17, 2006

Millions of gallons of flood waters were stored during heavy rains, helping to prevent further erosion and flooding downstream.



February 6, 2006

The channel and wet prairie were visible after floodwaters receded.

If you'd like to visit Meadowlark Prairie, you can park at either Meadowlark Prairie Overlook off Green Hill Road or Checkermallow Access off Royal Avenue, or ride your bike west from downtown along the Amazon Creek Bike Path.



HEY KIDS!

What do you know about storm drains?



Hi! I'm Lily, the Pacific Tree Frog. I live in local waterways along with my friends. We really like having clean rivers and streams to swim and drink from. Will you help?



There are many kinds of storm drains and they have an important job to do. They carry rainwater from streets and alleys directly to local creeks and the Willamette River. Garbage or pollutants carried into storm drains with the rainwater harm fish in the rivers and can make water unsafe to drink.



Pollutants that get into rivers or lakes can hurt plants and animals.

WHAT CAN YOU DO?

Never put anything in a storm drain and please share this information with your friends and family. After all, we want our rivers to be clean for all kinds of reasons like swimming, fishing, and our wildlife friends. Can you think of other ways we use our rivers and why we like to have them clean?



Pollutants can cause deformities. This frog has grown an extra leg.



Yuck! Would you want to swim in this?



TEACHER INFORMATION

For more about our educational curriculum *SPLASH!* (Stormwater Pollution Learn and Share) or *Salmon and the Ecosystem*, call 682-2739.